

Higher Education and Knowledge Management

A. Rabbani Khorasgani, Ph.D.

University of Isfahan, Iran
e-mail: alirabbani8786@yahoo.com

A. Moazzeni, Ph.D.

Payame Noor University, Iran
Corresponding Author:
ahmad_moazeni@yahoo.com

Abstract

In this paper we argue about Knowledge Management (KM) and its implications for academic productivity with focus on models of changes in knowledge production posited by Gibbons et al and community model of knowledge management, especially in a transitional society as Iran. Based on the above argument, we have discussed the relationships between research and teaching productivity, briefly. Because of the significance of Higher Education and its relevant institutions (university and related communities) in knowledge management, we have raised some questions about reform in higher education and its relationship with knowledge management. Finally, knowledge is considered as culture or wisdom. In this approach, it is important to pay serious attention to the cultural aspect of knowledge especially in wisdom.

Keywords: Knowledge Management, Knowledge Production, Higher Education, Academic Productivity, Community Model, Wisdom.

Introduction

Types of knowledge

Knowledge can have various meanings. As Weert put it, there is common sense or ordinary knowledge which anybody may have and there are practically-oriented and technical and scientific types of knowledge. Common distinctions are made between universal and local knowledge and between explicit or codified and tacit implicit experiential or reflective knowledge. Others define knowledge as that which is acknowledged only within specific scientific paradigms or academic communities.

(Weert, 1999). Also different types of knowledge can be categorized in terms of know-what (related to facts), know-why (related to causes & effects), know-how (related to skills), know – who (related to social relations and contexts). One of the classical distinctions, which became central for knowledge in organizations, is the differentiation of implicit and explicit knowledge of the Michael Polanyi. According to Polanyi (1958), implicit knowledge refers to that knowledge of a person, which has to do with his or her personal experiences, his or her biography and others learning processes in the meaning of

an individual know-how We know more than we know how to say (Krings, 2006). On the contrary, explicit knowledge is a formal and documented knowledge, an individual knowledge, which is markedly conscious and functional.

The Concept of Academic Productivity

The concept of academic productivity may be understood as a creative, original activity, academic vitality and so on Higher Education. In the scientific community, the term scientific productivity was originally used by Merton (1938) in the *Sociology of Science*, focusing on the natural sciences as an indicator of level of activity within the scientific community.

According to Arimoto (2006), The term academic productivity was introduced into the field of Higher Education research in Japan, in 1973, by Michiya Sinbori, as a modified concept of scientific productivity—with a focus not only on the Natural Sciences but also on the Humanities and Social Science. This concept was introduced into the sociological study of education in the author's original definition of this concept in the Shin-Kyoikushakaigaku Jiten (Japan Society of Educational Sociology): an indication to know the creative activity outcome made by scientists involved in attempting to make new discoveries and inventions of social theory, law, concept, material, etc.

This new concept of academic productivity is still focused on research activity related to knowledge. In the present Arimoto's view, this concept is not only adaptable to research but also to all functions of knowledge, and hence academic productivity is thought to apply to research, teaching and service productivity. This concept is a total indicator of the level of activity of academic community while both scientific community and academic community share the concept of research productivity (Arimoto, 2006).

Definition of the Wisdom

According to Oxford Companion to Philosophy, wisdom is a form of understanding that unites of reflective attitude and a practical concern. The aim of attitude is to understand the fundamental nature of reality and its significance for having a good life. The object of practical concern is to form a reasonable concern for good life. .. and to evaluate the situations in which they have to make decisions and acts from its point of view (Hondrech, 1995). Actually, wisdom as a type of knowledge accords to categories mentioned in types of knowledge that related to know- what and know-Why.

Social Development and Community Model in knowledge management

The university as a place of inquiry and production of knowledge is keenly related to social development. Social development defines the university and vice versa. University's nature has gradually changed in accordance with social development; in particular, present

society faces an age of huge structural change, which affects (among others) university and knowledge (Arimoto, 2006).

Some scholars have studied the process of shifting in accordance with management of knowledge or mode of knowledge production. The change is, from analog to digital, from formal knowledge to tacit knowledge and so on.

Definitions of KM abound, but its core features focus on intensifying the exploitation of knowledge to improve organizational performance. Bassi pointed out that KM is the process of creating, capturing, and using knowledge to enhance organizational performance (Scarbrough, 2001).

For reaching to this plan, it is necessary to transform the mode of knowledge production in universities. Va "limaa and Hoffman (2008) say that a radical metamorphosis is taking place in the relationship between knowledge production and university, as an institution. Authors like Gibbons et al. (1994), Nowotny et al. (2001) and Etzkowitz et al. (2000) propose that governments have promoted national prosperity by supporting new lucrative technologies together with the universities which become engines of their regions. Gibbons et al (1994), argue that a new form of knowledge production 'Mode 2' is replacing the traditional one, Mode 1. 'Mode 1 knowledge' has been produced within autonomous disciplinary contexts governed mainly by academic interests of a specific community whereas ' Mode 2 knowledge' is produced within the context of its application. 'Mode 2 knowledge' is transdisciplinary research characterized by heterogeneity and more socially accountable and reflexive than 'Mode 1 knowledge '. In addition, the proponents of the concept argue that universities are losing the monopoly of knowledge production because knowledge may be produced in a variety of organizations and institutions (Va"limaa & Hoffman, 2008).

However, we argue terms of the emergence of a new 'mode of knowledge production'. This analysis suggests that the focus of knowledge production in Knowledge Management is increasingly shifting away from the 'Mode 1' (university-based, science-push) to a 'Mode 2' (where knowledge is produced at the point of application). Table 1 summarizes the characteristic features of these different modes.

Table 1

The Two Modes of Knowledge Production

Mode 1	Mode 2
Problems defined by academic community Knowledge	Produced in the context of its application
Disciplinary knowledge	Transdisciplinary knowledge
Homogeneity of skills and knowledge production sites	Heterogeneity of skills and knowledge sites
Hierarchical and stable organizations	Heterarchical and transient organizations

Mode 1	Mode 2
Quality control by the invisible college	Socially accountable and reflexive

(Adapted from Gibbons et al in Scarbrough, 2001).

An important notion about new meaning of knowledge is located in 'mode 2' production of knowledge. For this reason we present Table 2. In this table community model in knowledge management equals with the new meaning of knowledge in Higher Education. Scarbrough has mentioned that the cognitive position aligns with the emphasis on the use of IT, which is an important characteristic of much of the KM literature. .. Conversely, the community view emphasizes a rather different set of management practices to do with the social and organizational context in which knowledge sharing takes place (Scarbrough, 2001).

Table 2

Competing Models of Knowledge Management

Cognitive model	Community model
Knowledge is equated with objectively defined concepts and facts	Knowledge is socially constructed and based on experience
Knowledge can be codified and transferred through text: information systems have a crucial role gains from knowledge management include exploitation through the recycling of existing knowledge	Knowledge can be tacit and is transferred through story-telling within social networks gains from knowledge management include exploration through the sharing of knowledge among different social groups
The primary function of knowledge management is to codify and capture knowledge	The primary function of knowledge management is to encourage knowledge-sharing through networking
The critical success factor is technology	The critical success factor is trust and collaboration
The dominant metaphors focus on the physical extraction and storage of knowledge-e.g. data mining, data warehouses	The dominant metaphors focus on the human community

Source: (Swan et al., 1999 in Scarbrough, 2001)

As Table 2 indicates, there are a number of important differences between the cognitive and community models of KM, deriving from radically different understandings of the nature of knowledge and its creation. At the same time, however, we need to recognize that these are differences within the broader discourse of KM. Thus, both cognitive and community models alike take as axiomatic the need to 'capture' knowledge for the benefit of the organization. While their preferred means may differ (codification of knowledge on

one hand, story-telling practices on the other) both approaches share a common interest in this intensification of knowledge work. In sum, a number of the features of the discourse and practice of KM correspond to the Mode 2 characterization of knowledge production that is useful for social development.

Applying the Community Model of Knowledge Management Necessary Reform in Higher Education for Transitional Society

This community model, which stresses knowledge and culture, is taken from the academic concern and process of social development mainly related to the field of Sociology Of Science, and new Sociology Of Knowledge (Swidler & Ardit, 1994; Zammito, 2007). But as Prpic (2007) pointed out: What would be the most fruitful sociological approach for empirical studies of the changes of social and intellectual organization of science, especially scientific production and productivity? It appears that the most relevant sociological theories of scientific fields (organizations) that bridged the gap between the traditional and constructivist views of science. Prpic has also mentioned five traditional models of scientific fields e.g. post-academic science (Ziman, 1996), the new mode of knowledge production (Gibbons et al., 1997), triple helix (Etzkowitz & Leydesdorf, 1998), academic capitalism (Slaughter & Leslie, 1997) and science in the agora (Nowotny et al., 2003) and highlights that these can not be suitable theoretical frameworks for studies in Sociology Of Science, especially research systems in transitional societies because of two reasons :

The first concerns the clear demarcation of the traditional and new mode of scientific production in the models, as well as their insufficient theoretical elaboration. Regardless of whether they explicitly mention Mode 2 or mention it not at all, researchers will at best find a combination of old and new knowledge production modes. The identified modes of knowledge production in sociology and economics do not speak in favor of Mode 2, despite the differences in the level of instrumentalization of knowledge among these disciplines.

The second and most important reason why the said models were inappropriate for analyzing transitional societies lies in the nature of the social context in which these changes in knowledge production were identified. This context was the world's most developed countries with powerful economies and technological and scientific potential, massive investments in R&D and competitive research systems (perpic, 2007).

Considering such background, the paper intends to make some agreements with regards to the themes "knowledge" and " culture" that inevitably have a great deal of impact on Higher Education reform.

Importance of Academic Productivity

The university is by nature a knowledge-based association, an organization whose

foundation is knowledge. Because the relationship between knowledge and the reform in Higher Education is tight, the community model focuses on knowledge assuming knowledge as the major determinant of university structure and operation. This approach emphasizes that academic work is basically knowledge, or application of knowledge both as stuff and means. In other words, we need to pay much attention to the nature of knowledge, of scientific knowledge. In this context, the term scientific productivity as well as academic productivity are used in the field of Sociology Of Science (Arimoto, 2006). Academic productivity dealt with the Humanities and Social Sciences, in addition to Natural Sciences. Moreover, Arimoto (2006) thought of the theoretical possibility of academic productivity - including teaching, service, administration and management productivity. Among these, he also pointed out the importance of both "research productivity" and "teaching productivity" paying much attention and consideration. Higher Education reforms are needed in terms of intentional integration of two separated orientation, as shown in Table 3. Concretely, systematic improvement in academic productivity related to academic organization, faculty and students. Faculty development (FD) in particular is an important and identifiable activity for realizing this purpose. The extent of institutionalization of (FD) into universities and college provides a kind of barometer to estimate realization of the propose and practice of academic productivity (Arimoto, 2006).

Table 3

Integration of Research and Teaching Orientation for Academic Productivity

Separating and Integration	Teaching	Research
Separating	1.Teaching orientation	2.Research orientation
Integration	3.Teaching–centered integration	4.Research–centered integration

Importance of Integration Knowledge with Culture and Wisdom

For presenting a critical view to the concept of information in Higher Education and Knowledge Management, especially in community model and its relation with the culture and society, serious attention must be paid to the meaning of wisdom and ethics. Considering that Wisdom lies in raising questions about knowledge, Sheth (2005) raised some question about knowledge in order to achieve wisdom and ethic." What do we do with the knowledge we have? What are its alternative uses? How do we make choices in the use of knowledge in a given situation? How do we assess and discriminate between the shades of use, misuse, abuse, overuse, underuse? (Sheth, 2005).

Finally he has discussed that Wisdom is thus based on the ideas of right and wrong behavior, that is, on ethics and crisis of ethic in current society, because the Ethics basically

comprises the conduct of a person or group in relation to others in support of crucial collective goals such as social stability, integrity, well being and progress.

Considering the above, the unprecedented advances made during last decades in the Information sciences has led to the emphasis on information gathering rather than understanding of what that information is about; especially in cognitive model of Knowledge Management in which information and emphasis on the use of IT has been dominated. Mary Midgley has said that when knowledge is. .. equated with information, understanding is pushed to the background and the notion of the wisdom is quite forgotten (Midgley, 1991 in Golshani, M, 2008).

Several theorists of modernity have argued that information term will move to knowledge concept and the knowledge should be equipped with wisdom in order to face the challenges in a new situation (especially in Higher Education). Knowledge is a deliberate utilization of information. Wisdom means to behave according to a shared knowledge in order to enhance the well-being of everybody in the awareness that personal actions have a social consequence, that today each part of the world is connected to the others. If we want to contribute to the actualization 'wisdom' in which there is a deliberate use of knowledge, it is necessary to develop in each person, in a well balanced way, different dimensions of his/her being, i.e. the knowledge and economic dimensions together with the creative and spiritual dimensions. Each person should be aware of the responsibility to fully exploit his/her own potentialities and at the same time, to act as a member of a society. In other words, everyone has to understand the consciousness of the social impact of his/her actions. If these are the real frames and the most likely perspective of our society, it is very important to educate and train people for living and acting properly in a dynamic and more and more complex society of the global context (Blasi, 2004).

On the other hand Delanty (2001) believes that most important crises of university originate from culture. He uses a powerful title for his view: the university is the place where knowledge, culture and society interconnect. For more comment about Higher Education and its connection to culture, we outline some points regarding Delanty's arguments:

- I. Universities are dominant and emerging cultural models of society.
- II. University should not focus merely on knowledge as information or as science, but on deeper conceptions.

The demise of universities in developing countries especially in Islamic countries may be worse than that of western countries. Golshani (2007) pointed out that in addition to western university, unfortunately, the universities of the Islamic world including those of Iran, have focused merely on the education of science tending to neglect the three main basics of culture which are philosophy, metaphysics and divine insights .

In addition many different studies have talked about the role of culture in Higher Education and Planning for its future perspectives. We have mentioned some of this in the following:

- Opie (2001) in his report about New Zealand (*Knowledge, innovation and creativity: designing a knowledge society for small democratic country*), pays attention to the importance of Cultural knowledge, defining it as a nation's whole stock of knowledge (including science and technology) that is shaped by values, beliefs and tradition, as well as the knowledge created by artists and people in the ordinary processes of social living.
- Swedish Institute for Studies in Education and Research (SISTER) in a grant research project (*Culture in knowledge society*) and some sub projects in 2001-2003 has complimented: cultural life, cultural politics and democracy - Labour markets, professions, and life styles of the new cultural society - cultural and creative places in knowledge society and culture in the new economy. In programme area (*Cultural and creative places in knowledge society*) Maria Wikhall and Carolina Sigfridsoon indicate in their project, (*Arts in Universities: A study of higher education in Sweden*), that universities are facing important challenges, their traditional role of pursuing academic goals and striving for international excellence are continuously being challenged by their role as national and regional boosters of wealth and prosperity. Universities are also to an increasing extent competing with knowledge producers and educational organizations at an international arena. They therefore have to develop explicit strategies to meet rapidly changing demands and preconditions of the surrounding society. The aim of this project is to consider the role of culture for universities in a broader sense and to illustrate and analyze this role empirically by investigating the growth and development of Higher Education directed towards the cultural domain or the experience industry. The empirical part of the study shows that there is an increasing number of interdisciplinary educational programmes integrating art with subject from other disciplines (Sister, 2004).
- There are multiple drivers of the accelerating change many of them are now referred to as futurists. They include rapid economic and cultural globalization, a shift from an energy-based industrial economy to a service and knowledge economy, the emergence of the knowledge society, dazzling technological innovation as a consequence of the confluence of the GRIN technologies (Genomics, Robotics, Informatics and Nanotechnology), accelerating urbanization, shifting age demographics, radical changes in geopolitics, the end of the cold war, disintegration of the old Soviet Union, and the emergence of an enlarged European Union and environmental pressures including climate change.

To adequately prepare people and communities for new condition, revolutionary changes are required in university's mission, curriculum content, pedagogy and modes of inquiry.

Conclusion

In this paper we paid attention to two modes of knowledge production in Knowledge Management and Higher Education and their facing challenges. We propose that if Higher Education and Knowledge Management want to recover from their demise or crises, they must move toward wisdom or culture. Finally, some directions have been proposed for the future of Higher Education in 21 century. This process also includes Knowledge Management. As International Institute for Sustainable Development (2005) has used the definition of post- modern knowledge management as the recognition of informal paths of communications and relationships that cannot be systematized or managed but instead need to be fostered; attempts to find tools that can begin to merge formal and informal channels: blogs, mining e-mails, etc.

References

- Arimoto, A. (2006). 9 remarks on the relationship between knowledge functions and the role of the university. In S.Sorlin & H.Vessuri (Eds.), *Knowledge society vs. knowledge economy : Knowledge, power, and politics* (pp. 175-197). Macmillan.
- Blasi, P. (2004, September). The contribution of higher education and research to knowledge society. *Strasburg*, pp. 1-11.
- Delanty, G. (2001). The university in knowledge society. *Organization Overviews*, 8 (2), 149 – 153.
- Golshani, M. (2007). The culture of university. *Pazhouheshgaran*, (12 & 13).
- Honderch, T. (1999). *The oxford companion to philosophy*. Oxford: Oxford University Press.
- International Institute for Sustainable Development. (2005). The Terminology of Knowledge for Sustainable Development: Information, Knowledge, Collaboration and Communications. Retrieved from <http://www.iisd.org>
- Krings, B. (2006) .The sociological perspective on the knowledge-based society: Assumptions, facts and visions. *Enterprise and Work Innovation Studies*, 2, 9-19.
- Merton, R.K. (1938). *Science, technology and society in seventeenth century England*. New York: Howard Ferting.
- Opie, B. (2001). Cultural knowledge and conceptions of knowledge society. 13th Round table of the National Scholarly Communications Forum, Canberra, 9 August .
- Prpic, K. (2007). Changes of scientific knowledge production and research productivity in a transitional society. *Scientometrics*, 72(3), 487–511.

- Scarbrough, H. (2001). Knowledge a` la mode: The rise of knowledge management and its implications for views of knowledge production. *Social Epistemology*, 15(3), 201–213.
- Sheth, N.R. (2005). Ancient wisdom for a knowledge society: A worm's-eye. *Journal of Entrepreneurship*, 14(2), 91-102.
- Swedish Institute for Studies in Education and Research. (2004). Culture in knowledge society. Retrieved from www.sister.nu.
- Swidler, A. & Ardit, J. (1994). The new sociology of knowledge. *Annual Review of Sociology*, 20, 305-329.
- Va`limaa, J. & Hoffman, D. (2008). Knowledge society discourse and higher education. *Higher Education*, 56, 265–285.
- Weert, E. (1999). Contours of the emergent knowledge society: Theoretical debate and implications for higher education research. *Higher Education*, 38(1), 49-69.
- Zammito, J. (2007). What's new in the sociology of knowledge? In Turner, S.P & Risjord, M.W. (Eds.), *Handbook of the philosophy of science: Philosophy of Anthropology and sociology*. London: Elsevier B. r.